CLAIMS

We claim:

1. Use of calcitonin in the manufacture of a medicament for the treatment of a condition for which treatment with an anabolic agent is indicated.

2. The use of claim 1, wherein the condition is atherosclerosis.

3. The use of claim 1 or 2, wherein the calcitonin is salmon calcitonin.

4. Use of calcitonin in the manufacture of a medicament for the treatment of disorders of calcium metabolism in a selected patient population, wherein the patient population is selected on the basis of the gene expression profile indicative of calcitonin efficacy by the patient to whom calcitonin is administered.

5. The use of claim 4, wherein the calcitonin is salmon calcitonin.

6. The use of claim 4 or 5, where the calcitonin is administered in a therapeutic dose prior to determining the gene expression profile by the patient.

7. The use of claim 4 or 5, where the calcitonin is administered in a sub-therapeutic dose prior to determining the gene expression profile by the patient.

8. Use of parathyroid hormone or a parathyroid hormone analogue in the manufacture of a medicament for the treatment of disorders of calcium metabolism in a selected patient population, wherein the patient population is selected on the basis of the gene expression profile indicative of parathyroid hormone or parathyroid hormone analogue efficacy by the patient to whom parathyroid hormone or parathyroid hormone analogue is administered.

9. The use of claim 8, wherein the parathyroid hormone analogue is PTS893.

10. The use of claim 8 or 9, where the parathyroid hormone or parathyroid hormone analogue is administered in a therapeutic dose prior to determining the gene expression profile by the patient.

11. The use of claim 8 or 9, where the parathyroid hormone or parathyroid hormone analogue is administered in a sub-therapeutic dose prior to determining the gene expression profile by the patient.

12. A method for treating a condition in a subject, wherein the condition is one for which administration of a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof is indicated, comprising the steps of:

(a) administering a compound to the subject;

(b) obtaining the gene expression profile of the subject, wherein the gene expression profile comprises the gene expression pattern of one or more genes, where the expression patterns of the one or more genes are a consequence of administration of the compound; and

(c) comparing the gene expression profile of the subject to whom the compound was administered to a biomarker gene expression profile indicative of efficacy of treatment by a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof, wherein a similarity in the gene expression profile of the subject to whom the compound was administered to the biomarker gene expression profile is indicative of efficacy of treatment with the compound.

13. The method of claim 12, wherein the condition is one for which salmon calcitonin is indicated.

14. The method of claim 12, wherein the condition is one for which PTS893 is indicated.

15. The method of any one of claims 12 to 14, wherein the administered compound is a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof.

16. The method of claim 15, wherein the calcitonin is salmon calcitonin.

17. The method of claim 15, wherein the parathyroid hormone analogue is PTS893.

18. The method of any one of claims 12 to 17, wherein the subject is a mammal.

19. The method of claim 18, wherein the mammal is a primate.

20. The method of claim 19, wherein the primate is a cynomolgus monkey or a human.

21. The method of any one of claims 12 to 20, wherein the biomarker gene expression profile is the baseline gene expression profile of the subject before administration of the compound.

22. The method of any one of claims 12 to 20, wherein the biomarker gene expression profile is the gene expression profile or average of gene expression profiles of a vertebrate to whom a calcitonin, parathyroid hormone, a parathyroid hormone analogue of a combination thereof has been administered.

23. The method of any one of claims 12 to 22, wherein the gene expression profile comprises one or more genes selected from the group consisting of acid phosphatase 1 isoform a; activin A receptor type II like 1; activin A type IIB receptor precursor; activin beta C chain; alpha 2 HS glycoprotein; amelogenin; annexin V; arylsulfatase E precursor; ATPase H(+) vacuolar; ATPase H(+) vacuolar subunit; ATPase, H+ transport, lysosomal; ATPase, H+ transporting, lysosomal; ATPase, H^+ transporting, lysosomal; biglycan; bone morphogenetic protein 1; bone morphogenetic protein 10; bone morphogenetic protein 2A; bone morphogenetic protein 5; bone morphogenetic protein 6 precursor; calcium binding protein 1 (calbrain); calcium/calmodulin dependent protein kinase (CaM kinase) II gamma; calreticulin; cAMP responsive element modulator (CREM); carbonic anhydrase I; carbonic anhydrase II; cartilage oligomeric matrix protein precursor; cathepsin K; cathepsin W; CDC like kinase 1; CDC like kinase 2 isoform hclk2/139; chondroitin sulphate proteoglycan 2 (versican); chondroitin sulphate proteoglycan 3 (neurocan); chorionic somatomammotropin hormone 1; chymotrypsin C (caldecrin); collagen type 1 and PDGFB fusion transcript; collagen type II alpha 1; collagen type III alpha 1; collagen type IV alpha 2; collagen type IX alpha1; collagen type VI alpha 1; collagen type VI alpha 2 (AA 570 998); collagen type XI alpha 1; collagen type XI alpha2; collagen type XI alpha2; collagen, type I, alpha 2; collagen, type IV, alpha 1; collagen, type IX, alpha 2; collagen, type V, alpha 2; collagen, type VI, alpha 1; collagen, type VI, alpha 1 precursor; collagen, type XVI, alpha 1; collagen, type XVI, alpha 1; collagenase 3 (matrix metalloproteinase 13); connective tissue growth factor; cyclin A2; cyclin B1; cyclin D2; cyclin E2; cyclin dependent kinase 5; cyclin dependent kinase 5, regulatory subunit 1 (p35); cyclin dependent kinase 6; cyclin dependent kinase inhibitor 1A (p21, Cip1); cystatin B (stefin B); cytokine inducible kinase; death associated protein kinase 1; death associated protein kinase 3; dentin matrix acidic phosphoprotein 1 (DMP1); dual specificity phosphatase 9; dystrophia myotonica protein kinase; ectonucleotide pyrophosphatase/ phosphodiesterase 1; ectonucleotide pyrophosphatase/ phosphodiesterase 1; endothelial differentiation, G protein coupled receptor 6 precursor; oestrogen receptor; oestrogen receptor; oestrogen receptor related protein; oestrogen responsive B box protein (EBBP); fibroblast activation protein; fibroblast

growth factor 1 (acidic); fibroblast growth factor 18; fibroblast growth factor 4; fibroblast growth factor receptor; follistatin like 1; follistatin like 1; glutamate receptor, metabotropic 1; GPI1 N acetylglucosaminyl transferase component Gpi1; granulocyte macrophage colony stimulating factor (CSF1); growth arrest and DNA damage inducible, alpha; growth factor receptor bound protein 10; heparan sulphate proteoglycan 2 (perlecan); inositol 1,4,5 triphosphate receptor, type 1; inositol 1,4,5 triphosphate receptor, type 1; inositol 1,4,5 triphosphate receptor, type 2; inositol 1,4,5 trisphosphate 3 kinase isoenzyme; inositol polyphosphate 4 phosphatase type I beta; inositol polyphosphate 5 phosphatase; inositol(myo) 1(or 4) monophosphatase 1; inositol(myo) 1(or 4) monophosphatase 2; insulin like growth factor (IGF II); insulin like growth factor 2 (somatomedin A); insulin like growth factor binding protein; insulin like growth factor binding protein 2; insulin like growth factor binding protein 3; insulin like growth factor binding protein 5; insulin like growth factor binding protein 2; insulin like growth factor II precursor; insulin like growth factor II precursor; integrin alpha 10 subunit; interleukin 1 receptor associated kinase; Janus kinase 3; LIM protein (similar to rat protein kinase C binding enigma); lysyl oxidase like protein; MAD, mothers against decapentaplegic homolog 3; MAGUKs (membrane associated guanylate kinase homologues; MAP kinase kinase kinase (MTK1); MAPK13: mitogen activated protein kinase 13; MAPK8IP1: mitogen activated protein kinase 8 interacting protein 1; MEK kinase; metalloproteinase; mitogen activated protein kinase 1; mitogen activated protein kinase 8; mitogen activated protein kinase kinase 1; mitogen activated protein kinase kinase kinase kinase 4; mitogen activated protein kinase activated protein kinase 2; mitogen activated protein kinase activated protein kinase 3; MMD: monocyte to macrophage differentiation associated; neurochondrin; nuclear factor of activated T cells, cytoplasmic, calcineurin dependent 1; OS 4 protein (OS 4); OSF 2os osteoblast specific factor 2 (periostin); osteoclast stimulating factor (OSF); PAK4; PDGF associated protein; phosphatidylinositol 4 kinase, catalytic, beta polypeptide; phosphatidylinositol glycan, class L; phosphatidylinositol polyphosphate 5 phosphatase, isoform b; phosphatidylinositol 4 phosphate 5 kinase isoform C (1); phosphatidylinositol 4 phosphate 5 kinase, type I, beta; phosphatidylinositol 4

phosphate 5 kinase, type II, beta; phosphatidylinositol glycan class C (PIG C); phosphodiesterase 4A, cAMP specific; phosphodiesterase 4D, cAMP specific (dunce (Drosophila) homolog phosphodiesterase E3); phosphodiesterase IB, calmodulin dependent; phosphoinositide 3 kinase; phosphoinositide 3 kinase, catalytic, gamma polypeptide; phosphoinositide 3 kinase, class 3; phospholipase C b3; phospholipase C, beta 4; phospholipase D; phosphotidylinositol transfer protein; PKD2 Protein kinase D2; preprocollagen type I alpha 2; preprocollagen type I alpha1; procollagen alpha 1 type II; procollagen lysine 5 dioxygenase; procollagen proline, 2 oxoglutarate 4 dioxygenase (proline 4 hydroxylase), alpha polypeptide I; progestagen associated endometrial protein (placental protein 14, pregnancy associated endometrial alpha 2 globulin, alpha uterine protein); prolidase (imidodipeptidase) PEPD; proliferating cell nuclear antigen; prolyl 4 hydroxylase beta; protease, serine, 11 (IGF binding); proteasome (prosome, macropain) subunit, beta type, 10; protein inhibitor of activated STAT X; protein kinase 1 PCTAIRE; protein kinase C substrate 80K H; protein kinase C, alpha; protein kinase, cAMP dependent, catalytic, gamma; protein kinase, cAMP dependent, regulatory, type I, beta; protein kinase, cAMP dependent, regulatory, type II, alpha; purinergic receptor P2Y, G protein coupled, 11; RAC2 Ras related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2); receptor tyrosine kinase DDR; retinoid X receptor gamma; ribosomal protein S6 kinase; ribosomal protein S6 kinase, 90kD, polypeptide 3; SCAMP1: secretory carrier membrane protein 1 (vesicular transport); secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T lymphocyte activation 1); serine (or cysteine) proteinase inhibitor, clade H (heat shock protein 47), member 2; serine/threonine kinase 38; serine/threonine protein kinase; SF 1; Steroidogenic factor 1; signal transducer and activator of transcription 1; signal transducer and activator of transcription 2, 113kD; signal transducer and activator of transcription 5A; signal transducer and activator of transcription 5A; signal transducer and activator of transcription 6 (STAT6); Smad 3; Smad anchor for receptor activation, isoform 1; Smad5; SMAD6 (inhibits BMP/Smad1 (MADH1); SNF 1 related kinase; Spi B transcription factor (Spi 1/PU.1 related); Stat5b (stat5b); Ste20 related serine/threonine kinase; TEIG; TGFB inducible early growth response; TGFB inducible early growth response; TIEG; TGFB1 induced

anti apoptotic factor 1; TGF beta induced apoptosis protein 12; TGF beta precursor; TGF beta superfamily protein; Tob; tousled like kinase 1; transforming growth factor, beta receptor III (betaglycan, 300kD); transforming growth factor beta 3 (TGF beta 3); TRIO: triple functional domain (PTPRF interacting); tubulin alpha 1; tubulin alpha 3; tubulin alpha isotype H2 alpha; tubulin beta 2; tubulin beta 3; tubulin beta 4; tubulin beta, cofactor D; type VI collagen alpha 2 chain precursor; ubiquitin carrier protein E2 C; vascular endothelial growth factor; vascular endothelial growth factor; vascular endothelial growth factor B; and Y box binding protein 1.

24. The method of claim 23, wherein the gene expression profile comprises an increase in one or more genes selected from the group consisting of bone morphogenetic protein 5; cartilage oligomeric matrix protein; cathepsin K; pre-pro-alpha-2 type I collagen; and Y-box binding protein (bone and kidney).

25. The method of claim 23, wherein the gene expression profile in bone comprises a decrease in one or more genes selected from the group consisting of carbonic anhydrase II; Spi-B; and Y-box binding protein (muscle).

26. The method of claim 23, wherein the gene expression profile in bone comprises one or more genes selected from the group consisting of PU.1 (SPI1; Spi-B); granulocyte to macrophage colony-stimulating factor (CSF1) and monocyte to macrophage differentiation associate (MMD).

27. The method of claim 23, wherein the gene expression profile in bone comprises a change in the expression of osteoclast stimulating factor (OSF).

28. The method of claim 23, wherein the gene expression profile in bone comprises a change in the expression of vascular endothelial growth factor (VEGF).

29. The method of claim 23, wherein the gene expression profile in bone comprises a change in the expression of a gene selected from the group consisting of integrins; collagenase; matrix metalloproteinases I and II; procollagen endopeptidase/proteinase; lysyl hydroxylase; aggrecan; cartilage oligomeric matrix protein precursor; collagens type I, type II, type III, type IV, type V, type VI, type IX, type X, type XI, type XIII, type XIV, type XV, and type XVI; chondroitin sulphate proteoglycan; dermatopontin; heparan sulphate proteoglycan; and syndecan.

30. The method of claim 23, wherein the gene expression profile in bone comprises a change in the expression of a gene selected from the group consisting of amelogenin; dentin; ectonucleotide pyrophosphatases; and VEGF.

31. A method for choosing subjects for inclusion in a clinical trial for determining the efficacy of a compound for efficacy of treatment of a condition, wherein the condition is one for which administration of a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof is indicated, comprising the steps of:

(a) administering the compound to the subject;

(b) obtaining the gene expression profile of the subject, wherein the gene expression profile comprises the gene expression pattern of one or more genes, where the expression patterns of the one or more genes are a consequence of administration of the compound;

(c) comparing the gene expression profile of the subject to whom the compound was administered to a biomarker gene expression profile; and.

(d) then:

(i) including the subject in the clinical trial when the gene expression profile of the subject to whom the compound was administered is similar to the biomarker gene expression profile indicative of efficacy of treatment by a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof; or

(ii) excluding the subject from the clinical trial when the gene expression profile of the subject to whom the compound was administered is dissimilar to the biomarker gene expression profile indicative of efficacy of treatment by a calcitonin, parathyroid hormone, a parathyroid hormone analogue or a combination thereof.

32. The method of claim 31, wherein the compound is administered to the subject at a sub-therapeutic dose.

33. A method for determining whether a compound has a therapeutic efficacy similar to that of calcitonin, comprising the steps of:

(a) administering the compound to the subject;

(b) obtaining the gene expression profile of the subject, wherein the gene expression profile comprises the gene expression pattern of one or more genes, where the expression patterns of the one or more genes are a consequence of administration of the compound;

(c) comparing the gene expression profile of the subject to whom the compound was administered to a biomarker gene expression profile indicative of efficacy of treatment by calcitonin; and

(d) then:

(i) determining that the compound has a therapeutic efficacy similar to that of calcitonin when the gene expression profile of the subject to whom the compound was administered is similar to the biomarker gene expression profile of a subject to whom calcitonin is administered; or

(ii) determining that the compound has a therapeutic efficacy different from that of calcitonin when the gene expression profile of the subject to whom the compound was administered is different from the biomarker gene expression profile of a subject to whom calcitonin is administered.

34. The method of claim 33, wherein the calcitonin is salmon calcitonin.

35. The method of claim 33 or 34, wherein the subject is a mammal.

36. The method of claim 35, wherein the mammal is a primate.

37. The method of claim 36, wherein the primate is a cynomolgus monkey or a human.

38. The method of any one of claims 33 to 37, wherein the compound is administered to the subject at a sub-therapeutic dose.

39. A method for determining whether a compound has a therapeutic efficacy similar to that of a parathyroid hormone analogue, comprising the steps of:

(a) administering the compound to the subject;

(b) obtaining the gene expression profile of the subject, wherein the gene expression profile comprises the gene expression pattern of one or more genes, where the expression patterns of the one or more genes are a consequence of administration of the compound;

(c) comparing the gene expression profile of the subject to whom the compound was administered to a biomarker gene expression profile indicative of efficacy of treatment by a parathyroid hormone analogue; and

(d) then:

(i) determining that the compound has a therapeutic efficacy similar to that of a parathyroid hormone analogue when the gene expression profile of the subject to whom the compound was administered is similar to the biomarker gene expression profile of a subject to whom a parathyroid hormone analogue is administered; or

(ii) determining that the compound has a therapeutic efficacy different from that of a parathyroid hormone analogue when the gene expression profile of the subject to whom the compound was administered is different from the biomarker gene expression profile of a subject to whom a parathyroid hormone analogue is administered.

40. The method of claim 39, wherein the parathyroid hormone analogue is PTS893.

41. The method of claim 39 or 40, wherein the subject is a mammal.

42. The method of claim 41, wherein the mammal is a primate.

43. The method of claim 42, wherein the primate is a cynomolgus monkey or a human.

44. The method of claim 39, wherein the compound is administered to the subject at a sub-therapeutic dose.

45. A kit for use in determining treatment efficacy of a condition for which administration of a calcitonin, parathyroid hormone or a parathyroid hormone analogue is indicated, comprising:

(a) a reagent for detecting a biomarker of treatment efficacy of a condition for which administration of a calcitonin, parathyroid hormone or a parathyroid hormone analogue is indicated;

(b) a container for the reagent; and

(c) a written product on or in the container describing the use of the biomarker in determining the treatment strategy of the condition.

46. The kit of claim 45, wherein the reagent is a gene chip.

47. The kit of claim 45, wherein the reagent is a hybridization probe.

48. The kit of claim 45, wherein the reagent is a gene amplification reagent.

49. The kit of any one of claims 45 to 48, wherein the biomarker comprises one or more genes selected from the group consisting of acid phosphatase 1 isoform a; activin A receptor type II like 1; activin A type IIB receptor precursor; activin beta C chain; alpha 2 HS glycoprotein; amelogenin; annexin V; arylsulfatase E precursor; ATPase H(+) vacuolar; ATPase H(+) vacuolar subunit; ATPase, H+ transport, lysosomal; ATPase, H+ transporting, lysosomal; ATPase, H^+ transporting, lysosomal; biglycan; bone morphogenetic protein 1; bone morphogenetic protein 10; bone morphogenetic protein 2A; bone morphogenetic protein 5; bone morphogenetic protein 6 precursor; calcium binding protein 1 (calbrain); calcium/calmodulin dependent protein kinase (CaM kinase) II gamma; calreticulin; cAMP responsive element modulator (CREM); carbonic anhydrase I; carbonic anhydrase II; cartilage oligomeric matrix protein precursor; cathepsin K; cathepsin W; CDC like kinase 1; CDC like kinase 2 isoform hclk2/139; chondroitin sulphate proteoglycan 2 (versican); chondroitin sulphate proteoglycan 3 (neurocan); chorionic somatomammotropin hormone 1; chymotrypsin C (caldecrin); collagen type 1 and PDGFB fusion transcript; collagen type II alpha 1; collagen type III alpha 1; collagen type IV alpha 2; collagen type IX alpha1; collagen type VI alpha 1; collagen type VI alpha 2 (AA 570 998); collagen type XI alpha 1; collagen type XI alpha2; collagen type XI alpha2; collagen, type I, alpha 2; collagen, type IV, alpha 1; collagen, type IX, alpha 2; collagen, type V, alpha 2; collagen, type VI, alpha 1; collagen, type VI, alpha 1 precursor; collagen, type XVI, alpha 1; collagen, type XVI, alpha 1; collagenase 3 (matrix metalloproteinase 13); connective tissue growth factor; cyclin A2; cyclin B1; cyclin D2; cyclin E2; cyclin dependent kinase 5; cyclin dependent kinase 5, regulatory subunit 1 (p35); cyclin dependent kinase 6; cyclin dependent kinase inhibitor 1A (p21, Cip1); cystatin B (stefin B); cytokine inducible kinase; death associated protein kinase 1; death associated protein kinase 3; dentin matrix acidic phosphoprotein 1 (DMP1); dual specificity phosphatase 9; dystrophia myotonica protein kinase; ectonucleotide Pyrophosphatase/ Phosphodiesterase 1; ectonucleotide pyrophosphatase/ phosphodiesterase 1; endothelial differentiation, G protein coupled receptor 6 precursor; oestrogen receptor; oestrogen receptor; oestrogen receptor related protein; oestrogen responsive B box protein (EBBP); fibroblast activation protein; fibroblast growth factor 1 (acidic);

fibroblast growth factor 18; fibroblast growth factor 4; fibroblast growth factor receptor; follistatin like 1; follistatin like 1; glutamate receptor, metabotropic 1; GPI1 N acetylglucosaminyl transferase component Gpi1; granulocyte macrophage colony stimulating factor (CSF1); growth arrest and DNA damage inducible, alpha; growth factor receptor bound protein 10; heparan sulphate proteoglycan 2 (perlecan); inositol 1,4,5 triphosphate receptor, type 1; inositol 1,4,5 triphosphate receptor, type 1; inositol 1,4,5 triphosphate receptor, type 2; inositol 1,4,5 trisphosphate 3 kinase isoenzyme; inositol polyphosphate 4 phosphatase type I beta; inositol polyphosphate 5 phosphatase; inositol(myo) 1(or 4) monophosphatase 1; inositol(myo) 1(or 4) monophosphatase 2; insulin like growth factor (IGF II); insulin like growth factor 2 (somatomedin A); insulin like growth factor binding protein; insulin like growth factor binding protein 2; insulin like growth factor binding protein 3; insulin like growth factor binding protein 5; insulin like growth factor binding protein 2; insulin like growth factor II precursor; insulin like growth factor II precursor; integrin alpha 10 subunit; interleukin 1 receptor associated kinase; Janus kinase 3; LIM protein (similar to rat protein kinase C binding enigma); lysyl oxidase like protein; MAD, mothers against decapentaplegic homolog 3; MAGUKs (membrane associated guanylate kinase homologues; MAP kinase kinase kinase (MTK1); MAPK13: mitogen activated protein kinase 13; MAPK8IP1: mitogen activated protein kinase 8 interacting protein 1; MEK kinase; metalloproteinase; mitogen activated protein kinase 1; mitogen activated protein kinase 8; mitogen activated protein kinase kinase 1; mitogen activated protein kinase kinase kinase kinase 4; mitogen activated protein kinase activated protein kinase 2; mitogen activated protein kinase activated protein kinase 3; MMD: monocyte to macrophage differentiation associated; neurochondrin; nuclear factor of activated T cells, cytoplasmic, calcineurin dependent 1; OS 4 protein (OS 4); OSF 2os osteoblast specific factor 2 (periostin); osteoclast stimulating factor (OSF); PAK4; PDGF associated protein; phosphatidylinositol 4 kinase, catalytic, beta polypeptide; phosphatidylinositol glycan, class L; phosphatidylinositol polyphosphate 5 phosphatase, isoform b; phosphatidylinositol 4 phosphate 5 kinase isoform C (1); phosphatidylinositol 4 phosphate 5 kinase, type I, beta; phosphatidylinositol 4 phosphate 5 kinase, type II, beta; phosphatidylinositol glycan class C (PIG C);

phosphodiesterase 4A, cAMP specific; phosphodiesterase 4D, cAMP specific (dunce (Drosophila) homolog phosphodiesterase E3); phosphodiesterase IB, calmodulin dependent; phosphoinositide 3 kinase; phosphoinositide 3 kinase, catalytic, gamma polypeptide; phosphoinositide 3 kinase, class 3; phospholipase C b3; phospholipase C, beta 4; phospholipase D; phosphotidylinositol transfer protein; PKD2 Protein kinase D2; preprocollagen type I alpha 2; preprocollagen type I alpha1; procollagen alpha 1 type II; procollagen lysine 5 dioxygenase; procollagen proline, 2 oxoglutarate 4 dioxygenase (proline 4 hydroxylase), alpha polypeptide I; progestagen associated endometrial protein (placental protein 14, pregnancy associated endometrial alpha 2 globulin, alpha uterine protein); prolidase (imidodipeptidase) PEPD; proliferating cell nuclear antigen; prolyl 4 hydroxylase beta; protease, serine, 11 (IGF binding); proteasome (prosome, macropain) subunit, beta type, 10; protein inhibitor of activated STAT X; protein kinase 1 PCTAIRE; protein kinase C substrate 80K H; protein kinase C, alpha; protein kinase, cAMP dependent, catalytic, gamma; protein kinase, cAMP dependent, regulatory, type I, beta; protein kinase, cAMP dependent, regulatory, type II, alpha; purinergic receptor P2Y, G protein coupled, 11; RAC2 Ras related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2); receptor tyrosine kinase DDR; retinoid X receptor gamma; ribosomal protein S6 kinase; ribosomal protein S6 kinase, 90kD, polypeptide 3; SCAMP1: secretory carrier membrane protein 1 (vesicular transport); secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T lymphocyte activation 1); serine (or cysteine) proteinase inhibitor, clade H (heat shock protein 47), member 2; serine/threonine kinase 38; serine/threonine protein kinase; SF 1; Steroidogenic factor 1; signal transducer and activator of transcription 1; signal transducer and activator of transcription 2, 113kD; signal transducer and activator of transcription 5A; signal transducer and activator of transcription 5A; signal transducer and activator of transcription 6 (STAT6); Smad 3; Smad anchor for receptor activation, isoform 1; Smad5; SMAD6 (inhibits BMP/Smad1 (MADH1); SNF 1 related kinase; Spi B transcription factor (Spi 1/PU.1 related); Stat5b (stat5b); Ste20 related serine/threonine kinase; TEIG; TGFB inducible early growth response; TGFB inducible early growth response; TIEG; TGFB1 induced anti apoptotic factor 1; TGF beta induced apoptosis protein 12; TGF beta precursor;

TGF beta superfamily protein; Tob; tousled like kinase 1; transforming growth factor, beta receptor III (betaglycan, 300kD); transforming growth factor beta 3 (TGF beta 3); TRIO: triple functional domain (PTPRF interacting); tubulin alpha 1; tubulin alpha 3; tubulin alpha isotype H2 alpha; tubulin beta 2; tubulin beta 3; tubulin beta 4; tubulin beta, cofactor D; type VI collagen alpha 2 chain precursor; ubiquitin carrier protein E2 C; vascular endothelial growth factor; vascular endothelial growth factor; vascular endothelial growth factor B; and Y box binding protein 1.